(54) Title: METHOD AND DEVICE OF MULTI-RESOLUTION VECTOR QUANTILIZATION FOR AUDIO ENCODING AND DECODING

(54) 发明名称: 多分辨率矢量量化的音频编解码方法及装置
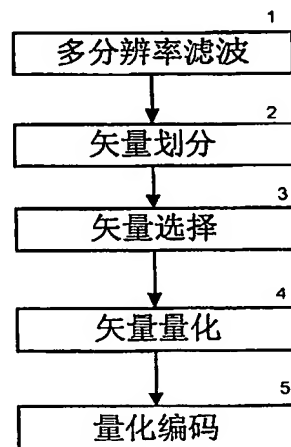
1 MULTI-RESOLUTION FILTER
2 VECTOR DIVIDING
3 VECTOR SELECTION
4 VECTOR QUANTILIZATION
5 QUANTILIZATION AND CODING

(57) Abstract: The present invention provides a method and device of Multi-resolution vector quantilization (VQ) for audio encoding and decoding used to analyze the audio signal in multi-resolution and quantilize the vectors of them. Said method for encoding audio comprises the steps of adaptively filtering the input audio signal so as to gain a time-frequency filter coefficiency, and output the filtered signal; dividing the vectors of the above- described filtered signal in the time-frequency plane so as to gain the vector combination; selecting the vector to be quantilized; quantilizing the selected vector and calculating the residual error of quantilization; and transmitting the quantilized coding task information as the side-information of an encoder to the audio encoder so as to quantilize and encode the residual error of quantilization. The invention can adaptively filter the audio signal, and adjust the resolutions of time and frequency. The hereinabove result of multi-resolution time-frequency analysis can be utilized effectively through reorganizing the filter coefficiency by selecting different organizing policies. VQ may improve encoding efficiency as well as control quantilizing precision simply and 1 optimize it.

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(57) 摘要

　　本发明提供一种多分辨率矢量量化的音频编解码方法及装置，用于对音频信号进行多分辨率分析和矢量量化；所述音频编码方法包括对输入的音频信号进行自适应滤波，获得时频滤波系数，输出滤波信号；对上述滤波信号在时频平面上进行矢量划分，获得矢量组合；选择进行矢量量化的矢量；对选择的矢量进行矢量量化，并计算量化残差；量化后的码本信息作为编码器的边信息传输到音频解码器，对量化残差进行量化编码。本发明可以自适应地对音频信号进行滤波，调整时间和频率分辨率；通过对滤波系数选择不同的组织策略重新进行组织，有效利用上述多分辨时频分析的结果；采用矢量量化既能提高编码效率，也能方便地控制量化的精度并进行优化。